CLAIMS

1. A process for manufacturing filament yarns for technical applications by spinning a polymer over 90% of the chains of which are composed of ethylene terephthalate units, with the spinning process having the following elements:
   - extruding the polymer in the molten state through a spinneret plate,
   - passing the thus formed filaments through a heated zone and a cooling zone in that order,
   - fixing the filament speed,
   - drawing the filaments to a length of 1,5 to 3,5 times their original length, and
   - winding the resulting filament yarn,
   with all elements being covered in a single process pass, characterised in that
   - prior to being drawn the filaments have a crystallinity smaller than 16% and
   - the winding speed of the yarn is larger than 6000 m/min.

2. A process according to claim 1, characterised in that prior to being drawn the filaments have a crystallinity of 5 to 14%.

3. A process according to claim 1, characterised in that prior to being drawn the filaments have a crystallinity of 7,5 to 12%.

4. A process according to any one of the preceding claims, characterised in that the polymer has a diethylene glycol (DEG) content of less than 2,5 wt.%

5. A process according to claim 4, characterised in that the polymer has a DEG content of less than 1 wt.%.

6. A process according to claim 5, characterised in that the polymer has a DEG content of less than 0,8 wt.%.

7. A process according to any one of the preceding claims, characterised in that the spinneret plate has a temperature in the range of $T_m+20°C$ and $T_m+70°C$, with $T_m$ being the melting point of the polymer.

8. A process according to any one of the preceding claims, characterised in that the spinneret plate has 100 to 1000 spinning orifices.

9. A process according to claim 8, characterised in that the spinneret plate has 200 to 400 spinning orifices.

10. A process according to any one of the preceding claims, characterised in that the heated zone has a length of 0,10 to 1,00 m.

11. A process according to claim 10, characterised in that the heated zone has a length of 0,15 tot 0,50 m.

12. A process according to any one of the preceding claims, characterised in that the heated zone is composed of a heated tube having a temperature in the range of $T_m°C$ to $T_m+150°C$.

13. A process according to claim 12, characterised in that the heated zone is composed of a heated tube having a temperature in the range.of $T_m+30°C$ to $T_m+100°C$.

14. A process according to any one of the preceding claims, characterised in that the cooling zone is composed of a perforated tube where the resistance to flow of the wall of the tube is higher at the top of the tube than at its bottom.

15. A process according to any one of the preceding claims, characterised in that prior to being drawn the filaments have a birefringence of 0,040 to 0,080.

16. A process according to any one of the preceding claims, characterised in that the filaments are drawn in one or more steps and the temperature of the godet for the first drawing step is below $T_g+60°C$, $T_g$ being the glass transition temperature of the polymer.

17. A polyester filament yarn, characterised in that the yarn has the following properties:
   - breaking tenacity ≥ 650 mN/tex,
   - elongation at break > 10%, and
   - breaking toughness > 40 J/g,
   and that this yarn can be used to make a cord having a breaking tenacity of more than 570 mN/tex, a dimensional stability of more than 110, and a quality factor $Q_f$ of more than 50.

18. A polyester filament yarn according to claim 17, characterised in that this yarn can be used to make a cord having a quality factor $Q_f$ of more than 100.

19. A polyester filament yarn according to claim 18, characterised in that this yarn can be used to make a cord having quality factor $Q_f$ of more than 125.

20. A polyester filament yarn according to claim 19, characterised in that this yarn can be used to make a cord having a quality factor $Q_f$ of more than 150.

21. Cord comprising polyester filaments, characterised in that the cord has the following properties:
   - breaking tenacity ≥ 570 mN/tex,
   - dimensional stability > 110, and
   - quality factor > 50.

22. Cord according to claim 21, characterised in that the quality factor is larger than 100.

23. Cord according to claim 21, characterised in that the quality factor is larger than 125.

24. Cord according to claim 21, characterised in that the quality factor is larger than 150.

25. Use of polyester filament yarn according to any one of claims 17 through 20 as reinforcing material in pneumatic tyres for cars.

26. Rubber article capable of sustaining mechanical load which contains polyester reinforcing yarn according to any one of claims 17 through 20.

27. Rubber article capable of sustaining mechanical load according to claim 26, characterised in that the article is a pneumatic tyre for a car.